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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,413	06/15/2001	Shuo-Yen Robert Li	Li 19	8415

570 7590 09/05/2006

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ONE COMMERCE SQUARE
2005 MARKET STREET, SUITE 2200
PHILADELPHIA, PA 19103

EXAMINER

PHAN, MAN U

ART UNIT	PAPER NUMBER
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2616

DATE MAILED: 09/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	09/882,413	LI, SHUO-YEN ROBERT	
	Examiner	Art Unit	
	Man Phan	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 and 11 is/are allowed.
- 6) ☒ Claim(s) 4, 9 is/are rejected.
- 7) ☒ Claim(s) 5-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is in response to applicant's 01/09/2006 amendment in the application of Li for a "Multicast concentrators" filed 06/15/2001. This application claims Priority from Provisional Application 60212333 filed 06/16/2000. The amendment and response has been entered and made of record. Claims 4-11 are pending in the application.

Double Patenting

2. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain : patent therefor ..." (Emphasis added). Thus, the term "same invention" in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible

harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

4. Claims 4 and 9 are rejected under the judicially created doctrine of double patenting over claims 1 of U. S. Patents No. 7,106,728 (or US# 7,079,532, US#6,999,466, US#7,065,073). This is a provisional double patenting rejection since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims are equivalent in scope and embodiment. The language of the two claims is equivalent in functioning. The subject matter claimed in the instant application is fully disclosed in the referenced co-pending application and would be covered by any patent granted on that co-pending application since the referenced co-pending application and the instant application are claiming common subject matter, as follows:

With respect to the specific limitations, claims 1 of U. S. Patents No. 7,106,728 (or US# 7,079,532, US#6,999,466, US#7,065,073) are equivalent to the pending claims 4, 9 of Application '413 for defining a MxN multicast interconnection, in which m output ports are portioned into two groups wherein m-n of the output ports are grouped as a 0-output group and the remaining n output ports are grouped as a 1-output group. Claims 1 of U. S. Patents No. 7,106,728; 7,079,532 (US#6,999,466, US#7,065,073) also disclose the routing a bicast signal as recited in claims 4 and 9 of the present application '413. All of the structural elements of the co-

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pending claims are present in the pending claims, defined with either identical or equivalent language. Additionally, the functional language, although varying in syntax, reflects identical operation, purpose, application, and environment.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other co-pending application. It has been held that the omission of an element and its function is an obvious expedient if the remaining elements perform the same function as before. In re Karlson, 136 USPQ 184 (CCPA). Also note Ex parte Rainu, 168 USPQ 375 (Bd. App. 1969); omission of a reference element whose function is not needed would be obvious to one skilled in the art.

Claim Rejections - 35 USC ' 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by prior art under 35 U.S.C. 103(a).

6. Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pauwels et al. (US#5,506,840) in view of Scholtens et al. (US#6,882,652).

With respect to claim 4, Pauwels et al. (US#5,506,840) disclose a novel system and method for a multi-stage interconnection network having several switching stages, according to the essential features of the claims. Pauwels discloses in Fig. 2 a block diagram illustrated a multicast switching for use in broadband network, in which a multi-stage (MXN) interconnection network which has M input ports and N output ports, for transmitting packets from the input ports to the output ports. Pauwels teaches (Cols. 7-9) a concentrator for routing 0-bound or 1-bound input signals comprising: a plurality of input ports to receive the input signals; output ports partitioned into a 0-output group and a 1-output group; and means responsive to the input signals, for routing a maximum number of the 0-bound input signals of the 0-output group and a maximum number of 1-bound input signals to the 1-output group (Pauwels teaches in Fig. 1 a maximum number of inputs being routed to a certain group of output ports and addressing a cell to an output group, LG1, . . . LGk, if k is 2, that means that there are only two output groups, which means when the first output group (LG1) of ports as been accessed, there is only one other group (LG2) of which cells can be routed to). Pauwels further teaches (Col. 7) and Fig. 2 output ports are partitioned into 2 groups, and each group is of size N, the number of 0-bound signals is N_0 , and the number of 1-bound signals is N_1 , and wherein the means for routing includes means for routing $\min(N, N_0)$ 0-bound input signals to the 0-output group and $\min(N_1, N_0)$ 1-bound input signals to the 1-output group (N , N_0 and N_1 are all variables, which means that Pauwels' system reads on this limitation).

Pauwels does not disclose expressly the bicast signals for routing in multistage interconnection network. However, the reliance on a commonly known standard such as the use of "*bicast signal*" in the manner claimed would have been obvious to the artisan as a matter of

the packet routing, and the use of “*bicast setting*” in routing signals processing is considered well known in the art in the multiplex communication system. In order to prevent the loss of any packets in transit during routing process (i.e, hand off processing), the correspondent node bicast or multicasts packets to the node. In the same field of endeavor, Scholtens teaches in Fig. 3B a technique for re-arranging channel among packet network connections, in which the gateway 14 bicast the traffic from DS0 circuit (A) over both virtual circuits (B) and (C) (*bicast signals setting for packet routing processing*).

Regarding claim 9, It's a method claims corresponding to the apparatus claim 4 above. Therefore, claim 9 is analyzed and rejected as previously discussed with respect to claim 4.

One skilled in the art would have recognized the need for effectively and efficiently routing signals in a multicast switching for use in broadband network, and would have applied Scholtens's novel use of bicast routing signals into Pauwels's method for switching packets in a multi-stage interconnection network. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Scholtens's private lines traversing a packet network and re-arrangement of channels among packet network connections into Pauwels' asynchronous switching node and routing logic means for a switching element used therein with the motivation being to provide a broadband switching.

Allowable Subject Matter

7. Claims 10, 11 are allowable.

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8. Claims 5-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for the indication of allowable subject matter: The closest prior art of record fails to disclose or suggest wherein the total number of the input signals is m , among which the number of 0-bound signal is x_0 , the number of 1-bound signals is x_1 , the number of bicast signals is x_b , and the number of idle signals is $m - x_0 - x_1 - x_b$, the maximum possible total number of 0-bound and bicast ones of the input signals routed to the 0-output group of the concentrator is $\min\{m - n, x_0 + x_b\}$, and the maximum possible total number of 1-bound and bicast ones of the input signals routed to the 1-output group of the concentrator is $\min\{n, x_1 + x_b\}$, as specifically recited in the claims; wherein the 0-bound input signals are classified into r_0 priority classes, $r_0 > 1$, and the 1-bound input signals are classified into r_1 priority classes, $r_1 > 1$, and the means for routing includes means for routing the maximum possible total number of 0-bound and bicast ones of the input signals according to the priority classes of the 0-bound input signals to the 0-output group and the maximum possible total number of 1-bound and bicast ones of the input signals according to the priority classes of the 1-bound input signals to the 1-output group, as specifically recited in claims.

9. Claims 4, 11 of this application conflict with claims 1-21 of Application 09/882,439; claims 1-2 of Application No. 09/882,075, and 09/882,112. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason

for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP. 822.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Li (US#7,099,314) discloses a general self routing control mechanism over bit-permuting switching networks.

Li et al. (US#6,657,998) discloses a conditionally nonblocking switch of the unimodal circular type.

Li et al. (US#6,952,418) discloses a conditionally nonblocking switch of the upturned under expander type.

Li et al. (US#6,954,457) discloses a conditionally nonblocking switch of the circular expander type.

Li et al. (US#6,657,998) discloses a conditionally nonblocking switch of the expander type.

Li et al. (US#7,031,303) discloses a conditionally nonblocking switch of the upturned decompressor type.

Li et al. (US#7,035,254) discloses a conditionally nonblocking switch of the upturned compressor type.

Li et al. (US#7,042,873) discloses a conditionally nonblocking switch of the circular unimodal type.

Li et al. (US#7,042,878) discloses a general self routing mechanism for multicasting control over bit-permuting switching networks.

Li et al. (US#7,050,429) discloses a conditionally nonblocking switch of the decompressor type.

Li et al. (US#7,065,074) discloses a generalized divide-and-conquer networks.

Li et al. (US#7,072,334) discloses a physical implementation of switching fabrics constructed from recursive 2-stage interconnections.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (571) 272-3149. The examiner can normally be reached on Mon - Fri from 6:00 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin, can be reached on (571) 272-3134. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

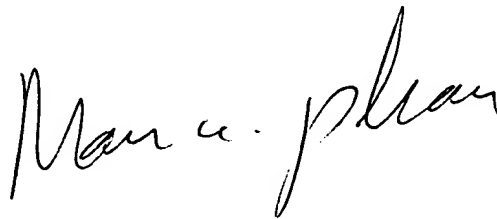
12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for

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unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at toll free 1-866-217-9197.

Mphan

Aug. 31, 2006

A handwritten signature in cursive script that reads "Man u. phan".

**MAN U. PHAN
PRIMARY EXAMINER**